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ABSTRACT

Over the past nine years 462 sophomore college students in 23 classes in General Psychology were administered at least one test of intelligence. Coefficients of correlation were computed between these scores and the scores on author-made objective subject matter tests ("Tests") and the performance on "Non-tests" (experiments, reviews, observations, term paper). The correlations between intelligence and "Tests" ranged from .35 to .39 while those between intelligence and "Non-tests" were insignificant. A correlation of .39 between "Tests" and "Non-tests" possibly indicates a general "academic factor." (Author)

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Intelligence Tests as Predictors of Performance in General Psychology

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Introduction

Over the past nine years the present author has taught over forty classes of students in General Psychology at a state college in a southern city. To each class at least one test of "intelligence" was administered. The present study is concerned with finding relationships between performance in class and these tests of intelligence. Here is a brief description of the course objectives and methods used to evaluate the degree to which these objectives were achieved. The teaching procedure in the classes followed the same general pattern with the same procedures for gaining those objectives.

Objectives of the Course

1. To develop an attitude toward the use of methods of science in the solution of problems of human behavior.
2. To learn the facts--the subject matter--of general psychology.
3. To apply where appropriate what is learned to life situations.

Measuring Attainment of Objectives

The degree to which the second objective was achieved was measured by multiple choice questions prepared by the authors of the texts, (Ruch, 1958, Morgan, 1961). There were between eight and ten chapter tests of between ten and fifteen questions per chapter and a final examination of 150 questions selected at random from the item pool for each chapter.

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The degree to which objectives one and three were achieved was ascertained by evaluating:

1. Two or three experiments performed in class but written up individually. They were concerned with repression of unpleasant experiences, bilateral transfer, meaningfulness of material learned, Asch Effect, etc.
2. Articles from the professional journals were abstracted and presented to the class where they were discussed and problems of methodology and statistical symbols were explained.
3. Newspaper articles concerned with psychology were criticized from the standpoint of sampling, measurement, methodology, etc.
4. Three observations (which included schools for the mentally defective, juvenile court, schools for speech defects) were made and reported according to criteria arranged in advance by the class.
5. A term paper was written on a subject in psychology chosen by the student. It was evaluated by a rating scale which included originality, coverage of topic, evidence of research, organization, etc. Some of the term papers were reports of original research performed by the student (e.g., operant conditioning, comparison of two species of animals in maze learning, growth curves of rats, survey of student attitudes).

Nearly half the total points of the course were from the foregoing five kinds of activities (referred to as "Non-tests") while the remainder were from the objective "Tests."

Purpose

The purpose of the present investigation was to determine the relationship between intelligence as measured by the Otis, Henmon-Nelson, and Thurstone

test of Mental Alertness (T.M.A.) and the success with which the three objectives of the course were achieved as reflected by "Tests and "Non-tests." Each class was administered one and some classes two of these tests.

Subjects

Twenty-three classes (N=462) of 20 to 30 students each in general psychology, a sophmore level course were the subjects of this study. The twenty-three were randomly selected and represented approximately one-half the courses in general psychology taught by the author over the period of nine years. Of the twenty-three, seventeen had taken the Otis (N=382), twelve the T.M.A. (N=233), six both the Otis and the T.M.A. (N=113), and four the Henmon-Nelson (N=99). There was an increase in intelligence with time probably attributable to higher entrance requirements.

Procedure

The students were seated in a circle and discussions were developed by making a provocative statement, asking a question, or demonstrating some phenomenon (e.g., the phi phenomenon, G.S.R., etc.). The assignments, observations, experiments, and tests were logical outgrowths of these discussions.

Results

The following table shows the relationships between "Tests" and "Non-Tests" and intelligence as measured by the three intelligence tests. The correlations are averages (z transformation) from each of the classes.

Table I

Relationships Between the Intelligence Tests and "Tests" and "Non-tests"

	Otis[1]	T.M.A.[2]			H-Nelson[3]		
		L	Q	T	V	Q	T
"Tests"	.35	.38	.25	.39	.41	.22	.36
"Non-tests"	.08	-.08	-.05	0.11	.08	.02	.10

[1] N = 382, 17 classes

[2] N = 233, 12 classes

[3] N = 99, 4 classes

Discussion

It appears that whatever is involved in the "Non-tests," intelligence, as measured by the three tests has little to do with its quality or at least with its evaluation. Indeed, these tests did not indicate that "intelligence" was greatly involved in learning the subject matter of general psychology as measured by the multiple choice tests. There is a possibility, however, that these relationships would be different with different teachers or where different teaching techniques were employed.

The mean of intelligence varied considerably from one class to the other (Otis IQ= 109-124) but there were no corresponding differences between the coefficients of correlation.

In an attempt to get some understanding of what was involved in the performance of "Non-Tests"," this score was correlated with "Tests." In each of the 23 classes they were positively correlated with an overall coefficient of correlation of .39. These two activities appeared to have little in common so it could be hypothesized that the relationship is expressive of a general academic factor.

References

Morgan, Clifford T. Introduction to Psychology. New York: McGraw-Hill Book Company, Inc., 1961.

Ruch, Floyd L. Psychology and Life. (5th ed.) Chicago: Scott, Foresman and Company, 1958.